VERMILION FLYCATCHER (*Pyrocephalus rubinus*)

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Criteria Scores

Population Trend	Range Trend	Population Size	Range Size	Endemism	Population Concentration	Threats
10	0	10	10	0	5	10

Special Concern Priority

Currently considered a Bird Species of Special Concern, Priority 3. Included on CDFG's (1978) original Priority 1 list, and on their 1992 unprioritized list.

Breeding Bird Survey Statistics for California

Data inadequate for trend assessment (Sauer et al. 2000).

General Range and Abundance

The vermilion flycatcher is comprised of 12 subspecies, and ranges from the southwestern U.S. south to central Argentina and Uruguay (A.O.U. 1998, Wolf and Jones 2000). The subspecies occurring in the southwestern U.S. is *P. r. flammeus*, which ranges from south-central California, southern Nevada, southern Arizona, and southern Texas south to Baja California, Sonora, and Nayarit (A.O.U. 1957, Wolf and Jones 2000).

Seasonal Status in California

Breeding birds of the Colorado Desert are generally resident, but those in colder regions (such as the Mojave Desert) at least partially withdraw in winter (Grinnell and Miller 1944, S. Myers pers. obs.). Mojave Desert locales in which vermilion flycatchers have wintered somewhat regularly include Apple Valley, Victorville, California City, and China Lake Naval Air Weapons Station. Migrating birds arrive in California in mid-March, and generally depart by late August (Small 1994). Each winter some birds emigrate to southern California's coastal slope (Willett 1912, Grinnell and Miller 1944, Garrett and Dunn 1981, Unitt 1984, Lehman 1994).

Historical Range and Abundance in California

Grinnell and Miller (1944) considered the vermilion flycatcher to be "fairly common on breeding ground." They described the breeding range as the Colorado Desert, including the Imperial Valley northwest to at least Coachella, and the Colorado River valley to north of Needles. They noted that all known nesting localities were below 500 ft (152 m) elevation. By the early 1980s, the species' breeding distribution was known to extend as far west as Morongo Valley (Garrett and Dunn 1981). A small breeding population was present in coastal San Diego County in 1958-60, and one pair successfully nested at Bonita in 1968 (Unitt 1984).

Rosenberg et al. (1991) pointed out that vermilion flycatchers were considered numerous in the Lower Colorado River Valley in the early part of the 1900s.

Recent Range and Abundance in California

The Lower Colorado River Valley remains the stronghold of the vermilion flycatcher in California, but numbers there have declined since the early 1900s. Rosenberg et al. (1991) estimated only 10 pairs along the mainstem river, with a few additional pairs in the Bill Williams River delta. However, during focused surveys for other riparian obligate species along the Colorado River in recent years, biologists from the San Bernardino County Museum have incidentally detected dozens of pairs between Parker Dam and the Mexican border (R. McKernan pers. comm.). The small population that was established by the 1970s and 1980s in the Morongo Valley area persists, and has expanded into Yucca Valley. Currently, two pairs breed at Morongo Valley, and three pairs at the Yucca Valley golf course (E. Cardiff pers. comm.).

Away from the above, well-known breeding localities, vermilion flycatchers have nested at the following sites in California since 1990:

- Jess Ranch, Apple Valley, San Bernardino Co. (C. Pratt pers. comm.). A single pair nested there each year from 1995 through 2000, but was apparently not present in 2001.

- Mojave River, between Victorville and Helendale, San Bernardino Co. (North American Birds 54: 423, 2000; S. Myers pers. obs.). At least 4 territories were found in this area. In addition, vermilion flycatchers have been observed during several summers at Mojave Narrows Regional Park in Victorville, but nesting has yet to be confirmed there (S. Myers pers. obs., R. Erickson pers. comm.).
- Ridgecrest, Kern Co. One pair in 1992 (American Birds 46:1179, 1992), and another in 1994 (Field Notes 48:989, 1994; B. Barnes pers. comm.).
- China Lake Naval Air Weapons Station, Kern Co. One pair in 1994 (Field Notes 48:989, 1994). Presently, mulitiple pairs nest there each year (B. Barnes pers. comm.).
- California City, Kern Co. At least one pair in recent years (B. Barnes pers. comm.).
- South Fork Kern River Valley, Kern Co. Two pairs in 1996 (Field Notes 50:997, 1996), and one pair in 1998 (Field Notes 52:504, 1998).
- Leona Valley, Los Angeles Co. One pair in 1994 (Field Notes 48:989, 1994).
- Santa Barbara Canyon near Cuyama Valley, Santa Barbara Co. One pair, with one "probably successful brood," in 1992 (Lehman 1992, American Birds 46:1179, 1992).
- New Cuyama, Santa Barbara Co. One pair in 1995 (Field Notes 49:982, 1995).
- Northwest of Lancaster, Los Angeles Co. One pair, fledging two young, in 1998 (Field Notes 52:504, 1998; M. San Miguel pers. comm.).
- Lake Henshaw basin, San Diego Co. One pair per year in recent times (San Diego Co. Bird Atlas data).
- Near Bonsall, San Diego Co. At least one pair per year (San Diego Co. Bird Atlas data).
- Singing Hills/Rancho San Diego area along the Sweetwater River, San Diego Co. One or two pairs yearly (San Diego Co. Bird Atlas data).

- Horse Camp (Anza-Borrego Desert), San Diego Co. One pair in April 2001, but they did not remain to nest (San Diego Co. Bird Atlas data).
- De Anza Country Club, Borrego Springs, San Diego Co. One pair in 1997 (San Diego Co. Bird Atlas data).
- Mason Valley, San Diego Co. Two pairs annually in recent years (San Diego Co. Bird Atlas data).
- Vallecito Valley, San Diego Co. One pair in 2001 (San Diego Co. Bird Atlas data).

Ecological Requirements

In the breeding season vermilion flycatchers occur in arid scrub, farmlands, savanna, agricultural areas, and riparian woodland. They are often associated with surface water, and in Arizona occur where cottonwoods (*Populus* spp.), willows (*Salix* spp.), oak (*Quercus* spp.), mesquite (*Prosopis* spp.) and sycamores (*Platanus* spp.) line streams (Wolf and Jones 2000). In the Lower Colorado River Valley, they are most often found in willow and cottonwood dominated riparian woodland; mesquite, surface water, and pastureland is frequently nearby (Rosenberg et al. 1991, R. McKernan pers. comm.). At some sites in California, such as Morongo Valley and Victorville, cottonwood-willow woodland is used, but the flycatchers have also occurred on golf courses, in residential areas, and parks (Garrett and Dunn 1981, Wolf and Jones 2000, B. Barnes pers. comm., S. Myers pers. obs.).

No systematic studies of diet have been conducted, but like all flycatchers they consume insects and other arthropods. Among the insects known to be taken are grasshoppers, beetles, flies, and bees (Bent 1942, Wolf and Jones 2000).

Threats

Undoubtedly the most serious threat to the vermilion flycatcher in California has been the loss, degradation, and fragmentation of riparian habitats. Clearing of riparian woodland for agriculture,

flood control activities, the lowering of groundwater through pumping, and alteration of natural fluvial processes (primarily by dams) are all factors that have led to severely impacted riparian habitats throughout most of the state. Rosenberg et al. (1991) attribute habitat loss as the primary reason for the species' decline in the Lower Colorado River Valley in the 20th century.

Brood parasitism by brown-headed cowbirds (*Molothrus ater*) may contribute slightly to population declines in California, but the vermilion flycatcher appears to be an uncommon host (Friedmann 1963, Friedmann et al. 1977, Friedmann and Kiff 1985).

Management and Research Recommendations

- Focus on restoration and protection of riparian ecosystems, particularly the Lower Colorado River Valley and Mojave River. Assess current water management regimes as they relate to the maintenance or re-establishment of healthy riparian ecosystems.
- In order to ensure an accurate assessment of current population levels, conduct focused surveys along all drainages within the species' known range in California that appear to support suitable habitat.
- Conduct research to more fully understand the life history of the species. Research should be focused on specific habitat requirements and ecological conditions that maintain self-sustaining populations.

Monitoring Needs

Due to the extremely small populations in the state, and the fact that suitable habitat does not often occur along roads, the Breeding Bird Survey is not adequate for monitoring population trends of the vermilion flycatcher. Point counts conducted along the Colorado and Mojave rivers during the appropriate season would be a more effective method of monitoring this species. The population at Morongo Valley is monitored each year during an on-going Breeding Bird Census (E. Cardiff pers. comm.). However, many recent nesting pairs in California have occurred at isolated localities (e.g.,

ranch yards in the Antelope Valley, golf courses). Monitoring of these pairs would only be possible by making specific, focused visits in years following known breeding attempts.

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Literature Cited

American Ornithologists' Union. 1998. Check-list of North American Birds, 7th ed. American Ornithologists' Union, Washington, D.C.

Bent, A.C. 1942. Life histories of North American flycatchers, larks, swallows, and their allies. U.S. Natl. Mus. Bull. 179.

Friedmann, H. 1963. Host relations of the parasitic cowbirds. U.S. Natl. Mus. Bull. 233.

Friedmann, H. and Kiff, L.F. 1985. The parasitic cowbirds and their hosts. Proc. West. Found. Vertebr. Zool. 2.

Friedmann, H., Kiff, L.F., and Rothstein, S.I. 1977. A further contribution to knowledge of the host relations of the parasitic cowbirds. Smithson. Contrib. Zool. 235.

Garrett, K. and Dunn, J. 1981. Birds of southern California: Status and distribution. Los Angeles Aud. Soc., Los Angeles, CA.

Grinnell, J. and Miller, A.H. 1944. The distribution of the birds of California. Pac. Coast Avifauna 27.

Lehman, P.E. 1994. The birds of Santa Barbara County, California. Vertebrate Museum, University of California, Santa Barbara, CA.

Rosenberg, K.V., Ohmart, R.D., Hunter, W.C., and Anderson, B.W. 1991. Birds of the lower Colorado River Valley. Univ. of Arizona Press, Tucson, AZ.

Sauer, J. R., Hines, J. E., Thomas, I., Fallon, J., and Gough, G. 2000. The North American Breeding Bird Survey, results and analysis 1966-1999. Version 98.1, USGS Patuxent Wildl. Res. Ctr., Laurel MD (http://www.mbr-pwrc.usgs.gov/bbs/bbs.html).

Unitt, P. 1984. The birds of San Diego County. San Diego Society of Natural History Memoir 13.

Willett, G. 1912. Birds of the Pacific slope of southern California. Pac. Coast Avifauna 7.

Wolf, B.O. and Jones, S.L. 2000. Vermilion Flycatcher (*Pyrocephalus rubinus*). *In* The Birds of North America, No. 484 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.